

in Example 2, where 35 parts of an SIS block copolymer (Sol T 193B), 40 parts of hydrogenated dicyclopentadiene resin (Escorez 5340), 10 parts of aromatic reinforcing resin (Endex 155), 15 parts of naphthenic/paraffinic mineral oil, and antioxidant were used. This is done to achieve a good heat resistant adhesive, as noted. The aromatic reinforcing resin (Endex 155) from Hercules is a tackifying resin, and not a polymer. See attached brochure from Hercules, which specifically includes Endex 155 in their spectrum of hydrocarbon resins or tackifying resins.

In contrast, the present invention differs from Alper et al. in that Claims 1, 20 and 22 all recite adhesives wherein said total tackifying resin having a glass transition temperature of greater than 65 °C is less than total polymer content, while Claim 30 recites an adhesive wherein said total tackifying resin having a softening temperature of greater than 140 °C is less than total polymer content. See Examples 1-10.

Based on the above, Applicants submit that Alper et al. does not anticipate the present invention and Applicants respectfully requested that the 35 U.S.C. § 102 (b) rejection should be withdrawn.

B. § 103 (a) Rejection

As discussed above, the present invention differs from Alper et al. in that Claims 1, 20 and 22 all recite adhesives wherein said total tackifying resin having a glass transition temperature of greater than 65 °C is less than total polymer content, while Claim 30 recites an adhesive wherein said total tackifying resin having a softening temperature of greater than 140 °C is less than total polymer content. See Examples 1-13. In addition, the good heat resistance is preserved. See test results in Tables I-VIII. Thus, Alpers et al teach the use of more tackifying resin than polymer. Applicants submit that Alper et al. actually teach away from the present invention. There is no teaching or motivation in Alper et al to arrive at the present invention, where adhesive compositions comprise more polymer than tackifying resin. Applicants respectfully request that rejection based on § 103 (a) should be withdrawn.

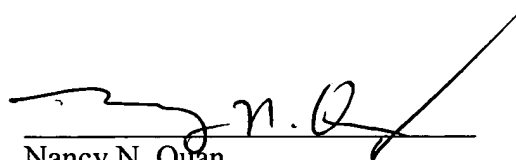
C. Conclusion

In conclusion, the adhesive compositions of the present invention are novel and non-obvious in view of Alper et al. It is submitted that the application is in condition for allowance. Reconsideration of the rejection is respectfully requested and allowance and passage to issue of Claims 1-30 at an early date is solicited.

Respectfully submitted,

8/23/01

Date



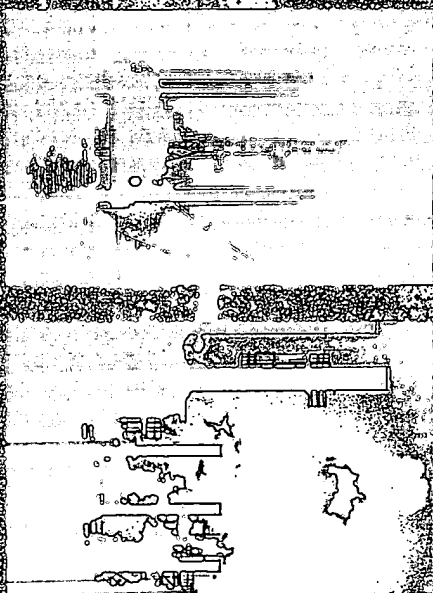
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FIELD
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TYPICAL PROPERTIES

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PURE MONOMER RESINS

Softening point, R&B, °C	Endex® 155	Endex 160	Kristalex® 1120	Kristalex® 3070	Kristalex 3085	Kristalex 3100	Kristalex 3115
	152	160	120	70	85	100	115

Color, Gardner	YID 7	YID 7	YID 7	YID 8	YID 8	YID 5	YID 5
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Melt viscosity, °C	10 poises	237	245	193	115	139	152	182
	100 poises	198	210	161	94	119	128	153
	1,000 poises	177	182	141	84	99	115	135

Tg, °C (onset)	100	105	56	27	36	46	64
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MMAP, °C	16	18	5	0.4	1.5	4	3
DACP, °C	-23	-15	-35	<-50	<-50	<-50	<-50
OMSCP, °C	121/115	155/138	>180	9/7	44/39	60/55	123/107

M _z	14,300	19,500	7,300	1,300	1,990	2,700	4,100
M _w	8,600	11,150	2,950	875	1,200	1,600	2,500
M _n	2,900	3,880	775	580	600	800	1,150
M _w /M _n	3.0	2.9	3.8	1.5	2.0	2.0	2.2

Endex® Resins
These resins are manufactured as a copolymer of modified styrenes, with softening points ranging from 152-160°C. The specific molecular weight and solubility of these resins make them particularly suited to reinforce the styrenic domains of block polymers in hot-melt and pressure-sensitive adhesive applications.

Kristalex® Resins
These resins are water-white and highly color stable, with softening points ranging from 70-140°C. They are manufactured as a copolymer of varying ratios of pure monomers. This results in products ranging from highly aliphatic-soluble to highly aliphatic-insoluble. Often, these higher aliphatic-insoluble resins find utility as reinforcing resins for the styrenic domain of block copolymer systems. Other uses include paints, caulking compounds, laminating and hot-melt adhesives, textile dry sizes, coatings, and plastic modification.

Piccolastic® Resins
These resins are manufactured from styrenic monomers, with softening points ranging from 5-125°C. The low-molecular-weight versions are useful as

Kristalex 5140	Piccolastic® A5	Piccolastic A75	Piccolastic D125	Piccotex® 75	Piccotex LC	Piccotex 100	Piccotex 120
140	5	75	125	75	90	98	118
YID 7	2	1	2	YID 10	YID 10	YID 8	YID 7

219	44	118	265	119	140	155	185
182	30	98	185	100	113	130	155
160	23	87	158	75	101	110	133

88	—	28	60	29	43	42	68
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9	-4	6	13	1	2	6	10
-48	<-50	<-50	-32	<-50	<-50	<-50	-35
>175	140/-5	93/72	>180	-12/-22	0/-13	27/18	54/51

9,590	510	2,450	207,000	1,700	2,400	4,300	6,400
4,800	430	1,350	50,400	1,100	1,500	2,650	3,800
1,450	360	670	1,550	680	850	1,200	1,600
3.3	1.2	2.0	32.5	1.6	1.8	2.2	2.4

plasticizers and as paper saturants. Higher softening versions are used in adhesive formulations, shoe construction, hot-melt applications, investment castings, and in xerographic applications. In block copolymer systems, they would be compatible with the styrenic phase but would not be expected to generate significant tack.

Piccotex® Resins
These products are manufactured as a copolymer of modified styrenes that result in a range of softening points from 75-120°C. Aliphatic solubility decreases proportionally as softening point increases. They are used in coatings, adhesives, as dry size agents, and in baking enamels.

General Product Characteristics
These are neutral resins with <1 acid number and <2 saponification number. The relative degree of unsaturation can vary, with bromine numbers ranging from 2-8. In general, the specific gravity as measured at 25°C will be 1.04 to 1.07. Flashpoints as measured by COC are >450°F (except for Piccolastic A5 at 330°F). Because of their inherent stability, these products do not contain an antioxidant. For specific data on individual products, refer to the product data sheet.